Widely Tunable Semiconductor Laser at 1650nm for Greenhouse Gas LIDAR Detection, Phase II

Completed Technology Project (2017 - 2020)

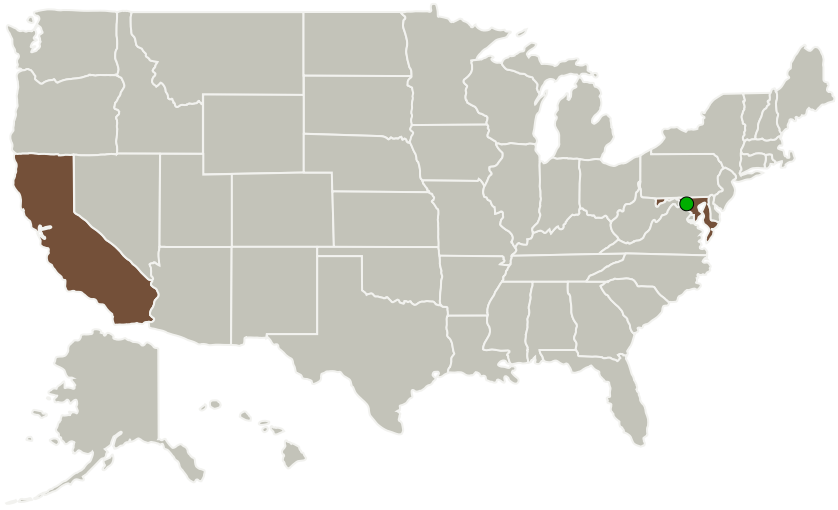
Project Introduction

In this program, Freedom Photonics is developing a low cost, semiconductor based widely tunable laser for multiple green gas detection. This laser source can be used in different LIDAR applications, or in any gas sensing scheme using spectroscopy.

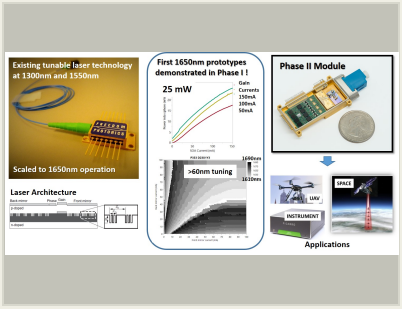
Anticipated Benefits

LIDAR systems for gas sensing Greenhouse gas instrumentationLIDAR systems for gas sensing Greenhouse gas instrumentation

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Freedom Photonics, LLC	Lead Organization	Industry	Santa Barbara, California
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



Widely Tunable Semiconductor Laser at 1650nm for Greenhouse Gas LIDAR Detection, Phase II Briefing Chart Image

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Primary U.S. Work Locations	
California	Maryland

Project Transitions

April 2017: Project Start

July 2020: Closed out

Closeout Documentation:

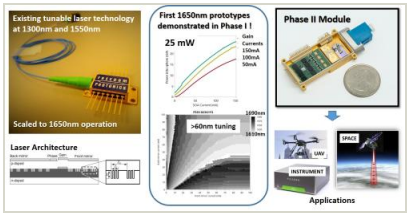
- Final Summary Chart PDF*(https://techport.nasa.gov/file/140962)*

July 2020: Closed out

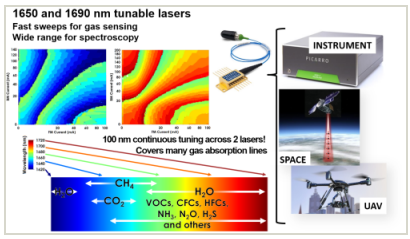
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140963)*

Images



Briefing Chart Image
Widely Tunable Semiconductor Laser at 1650nm for Greenhouse Gas LIDAR Detection, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/133328)*



Final Summary Chart Image
Widely Tunable Semiconductor Laser at 1650nm for Greenhouse Gas LIDAR Detection, Phase II *(https://techport.nasa.gov/image/126257)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Freedom Photonics, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Managers:

Mark A Stephen
Joseph Famiglietti

Principal Investigator:

Leif Johansson

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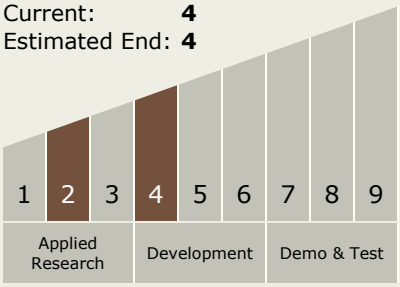
Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System